

What is claimed is:

1. Transgenic plant seed, wherein the genome of said seed comprises a recombinant polynucleotide encoding a polypeptide having an amino acid selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678 and homologs thereof, and wherein plants grown from said seed exhibit an enhanced phenotype.
2. Transgenic plant seed of claim 1, wherein said enhanced phenotype is increased yield.
3. Transgenic plant seed of claim 2, wherein said increased yield is the result of improved plant growth under one or more stress conditions in the group consisting of drought, shade, fungal disease, viral disease, bacterial disease, insect infestation, nematode infestation, cold temperature exposure, heat exposure, osmotic stress, reduced nitrogen nutrient availability, reduced phosphorus nutrient availability and high plant density.
4. Transgenic plant seed of claim 1, wherein said enhanced phenotype is enhanced plant morphology, physiology or seed composition.
5. Transgenic plant seed of claim 1, wherein said homolog has an amino acid sequence that is at least 70% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678, wherein identity is determined by calculating the percentage of identical and conservatively substituted amino acids in the homolog over the length of the SEQ ID.
6. Transgenic plant seed of claim 1, wherein said homolog has an amino acid sequence selected from the group consisting of SEQ ID NO:679 through SEQ ID NO:24149.
7. Transgenic plant seed of claim 1, wherein said polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678.
8. Transgenic plant seed of claim 1, wherein said seed is from a maize plant or a soybean plant.
9. A method of producing a plant having an enhanced phenotype, wherein said method comprises transforming plant cells with a recombinant polynucleotide comprising a promoter functional in a plant cell operably joined to encoding sequence for a polypeptide having an amino acid selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678 and homologs thereof, regenerating plants from said cells, and screening said plants to identify a plant having an enhanced phenotype.

10. A method of claim 9, wherein said enhanced phenotype is increased yield.
11. A method of claim 9, wherein said increased yield is the result of improved plant growth under one or more stress conditions in the group consisting of drought, shade, fungal disease, viral disease, bacterial disease, insect infestation, nematode infestation, cold temperature exposure, heat exposure, osmotic stress, reduced nitrogen nutrient availability, reduced phosphorus nutrient availability and high plant density.
12. A method of claim 9, wherein said enhanced phenotype is enhanced plant morphology, physiology or seed composition.
13. A method of claim 9, wherein said homolog has an amino acid sequence that is at least 70% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678.
14. A method of claim 9, wherein said homolog has an amino acid sequence selected from the group consisting of SEQ ID NO:679 through SEQ ID NO:24149.
15. A method of claim 9, wherein said polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678.
16. A method of claim 9, wherein said plant is a maize plant or a soybean plant.
17. A recombinant polynucleotide comprising a promoter functional in a plant cell operably joined to encoding sequence for a polypeptide having an amino acid selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678 and homologs thereof.
18. A recombinant polynucleotide of claim 17, wherein said homolog has an amino acid sequence that is at least 70% identical to an amino acid sequence selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678.
19. A recombinant polynucleotide of claim 1, wherein said homolog has an amino acid sequence selected from the group consisting of SEQ ID NO:679 through SEQ ID NO:24149.
20. A recombinant polynucleotide of claim 1, wherein said polypeptide has an amino acid sequence selected from the group consisting of SEQ ID NO:340 through SEQ ID NO:678.
21. A recombinant polynucleotide of claim 1, wherein said promoter is selected from the group consisting of a rice actin promoter, a glutelin 1 promoter and a PPDK promoter.